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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,071	11/13/2003	Steve Cicala	FMC1621PUS/202-1447	7919
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BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			EXAMINER ESTREMSKY, SHERRY LYNN	
			ART UNIT 3681	PAPER NUMBER

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,071

Applicant(s)

CICALA ET AL.

Examiner

Sherry L Estremsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 14, 16, 18, 29 and 37 is/are rejected.
- 7) ☐ Claim(s) 2, 4-13, 15, 17, 19-28, 30-36 and 38-41 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11-13-2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. A copending U. S. Patent application is mentioned on page 3 of the specification. The serial number and the file date needs to be provided.
2. The disclosure is objected to because of the following informality: in the table part 9, priority 19B, the "Characteristic to Adapt", increase oncoming starting pressure, does not agree with the statement in the "Rationale", that starting pressure should be decreased. Since the rationale says that the cause of the short slip time is assumed to be too much pressure, for the purpose of this action it is assumed that the characteristic to adapt should be decrease oncoming starting pressure.

Appropriate correction is required.

Claim Objections

3. Claims 11-15, 21, 24, and 34 are objected to because of the following informalities: in line 3 of claim 11 and in line 2 of claims 12 and 13, "excessive" should be --aggressive-- to maintain consistency with the rest of the disclosure; in line 5 of claim 14, --starting-- should be inserted between "element" and "pressure"; in line 5 of claim 15, "start" should be --starting--; in line 6 of claim 21, --starting-- should be inserted between "element" and "pressure"; in claim 24, line 6, it appears --time-- should be inserted after "boost"; in line 9 of claim 34, "increasing" should be --increased--. Appropriate correction is required.
4. Applicant is advised that should claim 25 be found allowable, claim 26 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an

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application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 14, 16, 18, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 does not accurately claim the disclosed invention by claiming the step of "detecting flare before torque transfer", since the specification discloses only detecting flare *during* torque transfer in combination with detecting slip time. It is noted that if "before" in line 2 of claim 14 was changed to --during--, claims 14 and 15 would be substantial duplicates of one another. It appears that claim 14 corresponds to priority 11 in table part 4, and claim 15 corresponds to priority 12. The only difference between priority 11 and priority 12 is the degree of error of the slip time, which is not part of the claims.

Claim 16 does not accurately claim the disclosed invention by claiming in lines 5-6 "increasing the oncoming friction element starting pressure". The only disclosed priority in which only flare during torque transfer and slip time being too short are detected (priority 13) gives the

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characteristic to adapt as decrease oncoming starting pressure. It appears the second "increasing" in line 5 should be --decreasing--.

Claim 18 does not accurately claim the disclosed invention by claiming the step of "detecting flare before torque transfer", since the specification discloses only detecting flare *during* torque transfer in combination with detecting slip time.

Claim 29 claims the conditions of priority 19B, including increasing oncoming friction element starting pressure, though as explained above, this is believed to be in error. It appears, according to the "Rationale" of priority 19B, that the oncoming friction element starting pressure should be decreased.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Lentz et al., U. S. Patent 5,072,390.

Lentz et al. discloses an adaptive control method for an electronic ratio shift controller for a multiple ratio transmission (column 1, lines 6-9). The transmission, shown in figure 1a,

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comprises gear elements defining plural torque flow paths between a torque input shaft and a torque output shaft. Pressure-actuated friction elements C1-C5 selectively establish an upshift in gear ratio as an oncoming friction element and an offgoing friction element are applied and released (column 1, lines 34-46). The upshift has adaptive shift characteristics including the time required to fill a pressure-actuated friction element with pressure fluid (fill time), the offgoing friction element pressure of the start of a ratio change (initial off-going pressure; P_{ioff}), and the oncoming friction element pressure needed to begin a ratio change (initial on-coming pressure; P_{ion}) (column 9, lines 14-40; figure 4).

The method includes the step of applying a boost time to the oncoming friction element at the start of an upshift (column 6, lines 10-13) in substantial synchronization with a reduction in pressure for the offgoing friction element (column 6, lines 1-3; figure 4).

Figures 8 and 10 show examples of controlling the duration that the boost time is applied to the oncoming friction element.

Pressure for the offgoing friction element is controlled to an offgoing friction element starting pressure P_{ioff} corresponding approximately to friction element torque capacity below which the offgoing friction element will begin to slip prior to a torque transfer between the friction elements (column 6, lines 4-6; since the pressure ramps down from P_{ioff} to the point of slipping, P_{ioff} corresponds to a torque capacity below which the element will begin to slip).

The pressure for the oncoming friction element is controlled from a boost time value to an oncoming friction element starting pressure P_{ion} required to begin an upshift (column 6, lines 14-18).

Measured operating conditions are monitored during a current upshift (column 2, lines 17-20).

Adaptive shift characteristics are adjusted for a subsequent upshift as determined by the measured operating conditions, whereby shift quality is enhanced (column 2, lines 15-16 and 22-28).

(claim 1)

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When flare before torque transfer (during fill time) is detected, the starting pressure for the offgoing friction element P_{ioff} is increased to reduce flare during a subsequent shift (column 12, lines 22-27).

(claim 3)

The method includes the step of measuring flare before torque transfer, which is at least one of a set of measured operating conditions during a shift event, and adjusting one of the adaptive shift characteristics (offgoing friction element starting pressure) during a subsequent shift event in response to changes in the measured operating conditions (column 2, lines 17-38).

(claim 37)

Allowable Subject Matter

9. Claims 2, 4-13, 15, 17, 19-28, 30-36, and 38-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 14, 16, 18, and 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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U. S. Patent 5,119,697 (Vukovich et al.) June 1992 - discloses an adaptive learning control of a shift including monitoring input to output speed ratios and adjusting boost time to correct any aberrations, thereby optimizing overlap between on-coming and off-going elements.

U. S. Patent 5,853,349 (Shimada et al.) December 1998 - discloses monitoring a rate of oncoming clutch slip time during a shift and adjusting boost time accordingly for a subsequent shift.

U. S. Patent 5,951,615 (Malson) September 1999 - discloses monitoring criteria which define shift performance, including ratio change slip time and speed flare, and using a fuzzy logic controller to determine adaptive pressure adjustments for similar subsequent shifts.

U. S. Patent 6,292,732 (Steinmetz et al.) September 2001 - discloses detecting tie-up during an upshift and decreases the oncoming clutch fill volume for subsequent upshifts of the same type.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherry L Estremsky whose telephone number is (703) 308-2164 (after April 7, 2005, (571)272-7090). The examiner can normally be reached on Tuesday and Friday from 7:30 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on (703) 308-0830 (after April 7, 2005, (571) 272-7095). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SLE


SHERRY ESTREMSKY
PRIMARY EXAMINER
AV3681 3-18-05